

DETAILED ACTION

Applicants' response to the last Office Action, filed on March 17th, 2010 has been entered and made of record.

Response to Arguments

1. Applicant's arguments with respect to the allowability of the currently presented claims have been considered but are moot in view of the current grounds of rejection that were necessitated by the current claim amendments.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 describes "if the determined probability value is below a certain value, determining the preferred variable by utilising a probability value assigned to each of the possible variables of information content within a dictionary not associated with the field identity". However, Applicant's disclosure (see paragraph 0032 of the application's associated US PG-PUB US 2006/0106610), which describes an alternate embodiment of the invention that assigns higher

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weights to the probability values of the dictionary associated with the field than other dictionaries, but does not describe an "if the determined value is below a certain value" or associated threshold value. Please reply to this rejection with a description of where the above limitation is within Applicant's disclosure or modify the claim in such a manner that only Applicant's disclosed invention is claimed. In the interest of furthering the prosecution of the case the Examiner will interpret the claim language as presented by Applicant's disclosure, and not the currently presented claim language.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-6, 13-14, 19-20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook et al. (US 6457883) in view of Seni (US 2003/0007018) and Geidl (US 2003/0088410).

Instant Claim 1: A method of interpreting data input to an electronic form-based data entry system, including the steps of, performed in a processing system:

receiving movement data from a moveable optically imaging pen [*Column 17 lines 38 to column 19 line 35 of Silverbrook describes the moveable input device (netpage pen).*], the movement data associated with a particular field of an electronic form and being generated by

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the pen based on optical imaging and movement of the pen within a corresponding particular field of a printed form associated with the electronic form; [*Silverbrook has taught in column 6 lines 22+ a system and method for presenting a form containing various fields that the user can select and fill-in (handwritten data) areas of the electronic form that has been printed using a pen like device (moveable input device).*]

determining one or more possible variables of information content in the movement data by applying at least one handwriting algorithm to the movement data; and [*Based on the measured strokes, pen position, and pen orientation the device performs handwriting recognition (column 17 line 38 to column 19 line 35 and column 21 of Silverbrook).*]

determining a preferred variable of the information content by utilising a field identity associated with the particular field of the electronic form [*See the above comments and cited sections of Silverbrook, wherein the various stroke and click information communicated by the pen data is utilized with respect to a particular coed field of the electronic form (Table 2 on column 21-22 of Silverbrook).*] and a probability value assigned to each of the possible variables of information content within a dictionary [*See discussion of Geidl below.*] associated with the field identity; and [*However, Silverbrook has not disclosed the assignment of probability values for handwriting recognition of the input data. The practice of applying probability values to the written data (digital ink) is to increase the accuracy and efficiency of the recognition process, and to improve error correction when the first or subsequent "best guesses" are incorrect, because it gives additional words, characters, or symbols that could be the word, character, or symbol in question. Seni in paragraphs 0019-021 has taught the use of such confidence or probability scores in assisting the recognition of handwritten information. It would have been*

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obvious to one of ordinary skill in the art to modify the teachings of Silverbrook to include further error correction of the handwriting recognition using a known method of error correction such as the one taught by Seni in order to increase the accuracy and efficiency of handwriting recognition as is taught by Seni.]

if [Note: See the above 35 USC 112 rejection.] the determined probability value is below a certain threshold value, determining the preferred variable by utilising a probability value assigned to each of the possible variables of information content within a dictionary not associated with the field identity. *[Silverbrook has taught a method for entering handwritten data into fields using an optically imaging pen (netpage pen), and the use of probabilities in assisting with the correct determination of the handwritten text. However, Silverbrook has not taught the relating of the handwritten entry fields with a pre-defined dictionary of possible variables (possible entries). However, Geidl has taught the capture of handwritten input data (movement data) received by the computing device (touch pad or virtual tablet in combination with a pen or stylus, or a pen-capture device) described by Geidl in paragraphs 0034-0035 and 0037-0038 is the movement data from the moveable input device (pen/stylus). Furthermore, the handwritten input data is associated with a particular field as is disclosed by Geidl in paragraphs 0038-0039 and item 202 of Figure 2. Geidl has further disclosed in paragraphs 0034-0042 that each field is contextually limited based on the type of particular field (paragraph 0039 of Geidl), thus limiting the number of variables detectable by the handwriting recognition algorithm. For example, see the telephone number field described in paragraphs 0041-0042 that is limited to the numerals 1-9. It would have been obvious to one of ordinary skill in the art to modify the field data and handwriting recognition method of Silverbrook and Seni, with the contextual limitation of field*

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data for increasing the accuracy recognition as taught by Geidl (paragraph 0014 of Geidl).

Additionally, Geidl has taught (paragraphs 0053 and 0056) the use of alternate dictionaries other than the one associated with the field in determining the handwritten data by associating a greater weight with the current dictionary (uses dictionary unless no adequate match is found i.e. – below a certain value, then searches other dictionary - paragraph 0053).]

Instant Claim 4: The method as claimed in claim 1, wherein determining the preferred variable of the information context is performed contemporaneously with receiving the movement data.

[As per column 21 lines 33-45 of Silverbrook, the handwriting recognition algorithm utilizing the various variables is online recognition and thus is performed as the data is received.]

Instant claim 5: The method as claimed in claim 1, wherein the moveable input device is a pen-like device. *[See Silverbrook reference as discussed above (netpage pen).]*

Instant claim 6: The method as claimed in claim 1, wherein determining the possible variables of information content utilises stroke information contained within the movement data. *[See the section title netpage interaction beginning on column 19 and column 20 lines 58-63 of Silverbrook.]*

Instant claim 8: The method as claimed in claim 1 wherein, certain entries in either dictionary are assigned a higher probability of being the preferred variable of the information content. *[As*

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per the discussion of instant claim 7, numbers in a telephone field are assigned all the probability, whereas other characters are given a value of zero.]

Instant claim 11: The method as claimed in claim 1, wherein the particular field of the electronic form is a telephone member field and the possible variables of information content are constrained to include only numerals. [*Paragraphs 0041-0042 of Geidl.*]

Instant claim 12: The method as claimed in claim 1, wherein the particular field of the electronic form is a credit card number field and the possible variables of information content are constrained to include only a fixed number of numerals, the numerals being further verifiable by use of a checksum. [*Geidl has taught the use of a credit card field in paragraphs 0042-0043 (including table, and as per the discussion of paragraphs 0041-0042 has taught (as an example of contextual field application) the constraining of the variables to numerals as well as constraining the field to a particular number of digits. Based on the teachings of Geidl it would have been extremely obvious to one of ordinary skill in the art to modify the teachings of Geidl by applying the knowledge of one ordinary skill in the art to utilize the same criteria used for a field of numbers as was specifically taught for a set of telephone numerals to other sets of numerals with known characteristics such as credit card numbers with a reasonable expectation of success in contextual recognition of the data.*]

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Instant claim 13: The method as claimed in claim 1, wherein the particular field of the electronic form from the set including: zip/post code; country; date; email address; or language. [*Column 27 lines 55-60 of Silverbrook include at least the zip code.*]

Instant claim 14: The method as claimed in claim 1, wherein the electronic form is implemented using one of the standardized file formats: HTML, XML, PDF or XForms. [*Column 30 lines 50 of Silverbrook.*]

Instant claim 17: The method as claimed in claim 1, wherein a field mask is associated with the particular field of the electronic form, the field mask used to check that a possible variable of information content conforms with a predefined string pattern. [*Paragraph 0049 of Geidl has taught a field mask (rules for a particular field) that defines pre-established patterns of character strings to be entered.*]

Instant claim 18: The method as claimed in any claim 1, wherein a possible variable of information content is derived from a selection list, or combination list involving previously determined preferred variables. [*Geidl has taught user bias lists in paragraph 0051 such that known or often used data associated with a particular field is given higher weight in the recognition process (paragraph 0051).*]

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Instant claim 19: The method as claimed in claim 1, wherein the electronic form is a paper-based interface provided with coded markings. [*Each netpage (electronic form) is coded with a printed tag (column 8 lines 50+ of Silverbrook).*]

Instant claim 20: The method as claimed in claim 19, wherein the coded markings are a pattern of infrared markings. [*Column 8 lines 60+ of Silverbrook.*]

Instant claim 22: The method as claimed in claim 1, wherein each electronic form is uniquely identified and stored on a network server. [*Column 8 lines 50-55 of Silverbrook.*]

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook in view of Seni and Geidl as applied to claim 1 above, and further in view of Sidles (US 2002/0062342) and Minkler (US 4712174).

Instant claim 9: The method as claimed in claim 1, wherein the particular field of the electronic is a name field and the dictionary associated with the field identity includes an indication of gender associated with selected names. [*Silverbrook in view of Seni and Geidl have taught the filling out of form data based on entered data and contextual data, but have not specifically taught the association of a name with gender or other information. However, Sidles has taught in paragraphs 0072 and 0088 the automated population of form data with information associated with a particular name once the name has been entered (saves the user time of entering the additional data), but does not specify that gender information is included. However,*

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Minkler has taught in column 4 lines 54-63 and column 5 lines 43-58 the association of a name with gender, address, and other information based on previously recorded data (list or dictionary). It would have been obvious to one of ordinary skill in the art to modify the associated list of information of Sidles with further information such as gender as taught by Minkler to expand the list of information used to fill out various forms. Given that it was known to one of ordinary skill in the art at the time of the invention to associate names with additional data as taught by Sidles and Minkler such as gender and to automatically populate this information (Sidles), then it would have been obvious given the teachings of Geidl (filling out forms using contextual information) to associate the name entered in a field with the additional information stored in the dictionary such as gender to efficiently populate the fields in the form with associated data as taught by Sidles and Minkler.]

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook in view of Seni and Geidl as applied to claim 1 above, and further in view of Scanlon (US 5850480).

Instant claim 10: The method as claimed in claim 1, wherein the particular field of the electronic form is an address field having sub-fields arranged hierarchically such that the preferred variable of the information content in a sub-field may be used to constrain possible variables of information content in another sub-field. *[Silverbrook in view of Seni and Geidl have taught the entry of data into fields, but have not taught an address field with an hierarchically arrangement of sub-fields such that data in the sub-field is constrained based on the information content in*

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another field. However, Scanlon has taught in columns 3-4 the filling out of forms using (including address fields) by constraining the sub-strings of lexicons based on how they are related and associated with one another in a composite lexicon character string. For example: An address fields is comprised of a string of lexicons wherein the sub-strings are numbers (relating to street address) and characters (relating to particular street). The constraining of lexicons (as taught by Scanlon in columns 3-4) improves the recognition accuracy of the optical character recognition. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the contextual field based character recognition method of Silverbrook in view of Seni and Geidl with the contextual limitations taught by Scanlon to limit the characters based on contextual data (also taught by Geidl) such as address data as taught by Scanlon to improve recognition accuracy.]

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Bloom whose telephone number is 571-272-9321. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm (EST). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le, can be reached on 571-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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